RESEARCH REPORT DOCUMENTATION PAGE

1. Report No.	2. Report Date	3. Contract No.	4. Project No.
ND 97-02	June 2004	N/A	IM-6-029(027)161

5. Title and Subtitle

Evaluation of an Experimental Portland Cement Concrete Pavement Project

6. Report Type

Click on link to open report

Work Plan ☐
Construction ☐
Evaluation ☒
Final ☐

7. Project No.

8. Project No.

9. Project No.

10. Project No.

11. Author(s)/Principle Investigator(s)

Curt Dunn, Tom Bold, Bryon Fuchs

12. Performing Organization Name and Address

NDDOT M+R ☒
NDDOT OTHER* ☐
NDSU ☐
UND ☐
UGPTI ☐
OTHER* ☐
*see supplementary notes

North Dakota DOT
Materials and Research Division
300 Airport Road
Bismarck ND 58504-6005

13. Sponsoring Agency Name and Address

North Dakota DOT
Materials and Research Division
300 Airport Road
Bismarck ND 58504-6005

14. Supplementary Notes

15. Abstract

Purpose and Need

Concrete pavement has been utilized in every state due to its durability. However, the pavements constructed in the last 10 to 20 years appear to be less durable than those constructed previously. The only properties normally targeted are strength and air content. These two factors alone can not guarantee durability in PCC pavement. The properties currently targeted are found using what is known as a "recipe". There is need to change the design philosophy and look at other properties besides strength and air.

Objective

The objective is to move toward an end result specification for concrete paving by moving away from recipe mixes to a mix design philosophy with target properties.

Scope

The scope was to construct an experimental recycled portland cement concrete pavement. The experimental pavement was broken up into test sections with each having different design parameters. Individual items to be evaluated over the long term are as follows: Distresses in the pavement, overall pavement condition, ride, and long term compressive strength. The project will be evaluated for a period of ten-years with reports every two years.

The location of the project is on Interstate 29 in the southbound lane from reference point 163 to 175. This section of the roadway is located approximately 22 miles north of Grand Forks, ND.

Summary

Test Sections 1 and 2 are exhibiting some minor corner cracking. All test sections are experiencing some aggregate pop-outs. Test Sections 2 and 3 are exhibiting very little distress of any type. After the third evaluation, all of the test sections are performing well. The tining, although light in Test Sections 2 and 3, appears to be performing well. The ride characteristics for all test sections remain excellent.

16. Key Words

Pavement Concretes
Aggregates
Admixtures
Design
Composite

17. Distribution Statement

No restrictions. This document is available to the public from:

North Dakota Department of Transportation
Materials and Research Division:
300 Airport Road
Bismarck ND 58504-6005
Office: (701) 328-6900 Fax: (701) 328-0310

18. No. of Pages

32

19. File type/Size

PDF/1 MB